



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: A8625

Aarti GUPTA, et al.

Appln. No.: 10/762,499

Group Art Unit: 2171

Confirmation No.: 5224

Examiner: Not Yet Assigned

Filed: January 23, 2004

For: DESIGN VERIFICATION FOR SAT-BASED MODEL CHECKING USING ABSTRACTION-REFINEMENT TECHNIQUE

PETITION UNDER 37 CFR 1.53(e)(2)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Sir:

In response to the "Notice to File Missing Parts of Nonprovisional Application filed under 37 CFR 1.53(b) - Filing Date Granted," mailed April 27, 2004 states, inter alia, that Page 14 of the specification appears to have been omitted from the application. In response, Applicant submits that Page 14 was filed with the rest of the application on January 23, 2004. The application was filed with eighty-one (81) pages of specification (including the abstract). As evidence of the submission of Page 14 of the above-referenced application, Applicant submits herewith a copy of the filing receipt, stamped by the PTO on January 23, 2004, acknowledging eighty-one (81) pages of specification.

Submitted herewith is a petition fee of \$130.00 as required by 37 C.F.R. § 1.17(h). Because the item which the Office alleges is missing was in fact filed with the application, Applicant requests refund of the \$130.00.

The Office is hereby directed and authorized to charge the petition fee of \$130.00 to Deposit Account No. 19-4880.

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01 FC:1460 130.00 DA

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REQUEST FOR EARLY NOTIFICATION OF SERIAL NUMBER

Inventor(s): Aarti GUPTA, Malay K. GANAI, Zijiang YANG and Pranav ASHAR

Title: DESIGN VERIFICATION FOR SAT-BASED MODEL CHECKING  
USING ABSTRACTION-REFINEMENT TECHNIQUE

Atty Doc. #: A8625 Client: NEC Laboratories America, Inc.

Filing Date: January 23, 2004 # Pgs. Spec/Abst: 80/1 #Claims: 74

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[54] FIG.5 shows an example implementation of using BMC Search with proof analysis to generate abstract models.

[55] FIG.6 shows examples of interface constraints for a latch in the design.

[56] FIG.7 illustrates an example of how an abstract model is derived.

[57] FIG. 8 shows an example implementation of performing iterative abstraction verification.

[58] FIG. 9 shows an exemplary implementation of handling a counterexample in the iterative abstraction flow.

[59] FIG. 10 shows an example implementation of refinement with proof analysis.

[60] FIG. 11 shows an example implementation of use of BMC search on abstract model.

[61] FIG.12 shows an example implementation of use of BMC proof on abstract model.

[62] FIG.13 shows an example implementation of use of BDD-based / SAT+BDD-based model checking on abstract model.

[63] FIG. 14 shows an example implementation of use of BDD-based / SAT+BDD-based reachability analysis on abstract model to Constrain BMC Search / BMC proof on larger models.

[64] FIG.15 shows an example of a conflict analysis.